

## ABSTRACT

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211 } The method of compressing/extending a color reproducing space compresses or extends chroma of a first color gamut in a same hue plane. Then, the method does not correct the lightness when a chroma value is 0, corrects a highest chroma point of the color gamut into a specified point in a second color gamut and corrects the lightness such that a correction amount changes in a non-linear manner when the chroma value is inbetween. Thereafter, the method compresses or extends it into the second color gamut. The color reproducing method and apparatus produces a third transformation definition by transforming a first color gamut represented by a first transformation definition into within a second color gamut represented by a second transformation definition such that the gradation is preserved, produces a fourth transformation definition by transforming a second gamut into within the first color gamut such that the gradation is preserved and produces a fifth transformation definition in the second transformation definition by providing an inverse transformation from the second transformation definition into the first transformation definition to the first color gamut and then produces a color reproduction target transformation definition for transformation from the first transformation to the second transformation definition by mixing the second color gamuts

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represented by the third transformation definition and the fifth transformation definition. Thus, compression/extension can be performed between color spaces having different color gamuts such that smoothness is maintained and color appearance and gradation are preserved; moreover, transformation is executed while coincidence and reproducibility of color are appropriately balanced therebetween.

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